

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for reproducing contents information from an interactive ~~optical-disc~~ device, comprising:

a) receiving contents information from a contents provider server via an Internet, storing the received contents information in a buffer memory, and synchronously reproducing data read from an ~~interactive-optical-disc~~ storage medium and the stored contents information;

b) if receipt of the contents information from the contents provider server is suspended or delayed, sending a last download position of the contents information in the buffer memory and a request command to the contents provider server to receive contents information subsequent to the last download position while maintaining a playback mode; and

c) receiving the contents information subsequent to the last download position from the contents provider server in response to the request command, and synchronously reproducing the contents information subsequent to the last download position with the data read from the ~~interactive-optical-disc~~ storage medium,

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the interactive ~~optical-disc~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

2-4. (Cancelled)

5. (Previously Presented) The method as set forth in claim 1, further comprising:
receiving from the contents provider server an acknowledgement of the request command prior to receiving the contents information.

6. (Currently Amended) A method for reproducing contents information from an interactive ~~optical-disk~~ device, comprising:

a) receiving contents information from a contents provider server via an Internet, storing the received contents information in a buffer memory, and synchronously reproducing data read from ~~an interactive optical-disk~~ a storage medium and the stored contents information;

b) if receipt of the contents information from the contents provider server into the buffer memory is suspended or delayed and if a size of the contents information downloaded into the buffer memory and not reproduced yet is below a predetermined reference value, automatically pausing a data reproducing operation of the ~~interactive optical-disk~~ storage medium for a predetermined period of time and, after the predetermined period of time, determining whether there is contents information received over the Internet; and

c) if there is contents information received over the Internet after the predetermined period of time, synchronously reproducing subsequently received contents information and data read from the ~~interactive optical-disk~~ storage medium,

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the interactive ~~optical-disk~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

7. (Cancelled)

8. (Previously Presented) The method as set forth in claim 6, wherein the step of re-synchronizing and reproducing comprises:

delaying the step of synchronously reproducing until the size of contents information in the buffer memory and not reproduced yet becomes greater than or equal to the predetermined reference value.

9. (Currently Amended) The method as set forth in claim 6, further comprising:

resuming the paused data reproducing operation of the ~~interactive optical disc~~storage medium if there is no contents information received over the Internet after the predetermined time period has elapsed.

10. (Cancelled)

11. (Currently Amended) A method for reproducing contents information from an interactive ~~optical disc~~ device, comprising:

a) receiving contents information from a contents provider server via an Internet, storing the received contents information in a buffer memory, synchronously reproducing data read from ~~an interactive optical disc~~a storage medium and the stored contents information, and counting synchronizations between the data read from the ~~interactive optical disc~~storage medium and the stored contents information;

b) if receipt of the contents information from the contents provider server is suspended or delayed, estimating a number of missed synchronizations during a corresponding suspension or delay period based on the counted synchronizations while maintaining a playback mode, and sending a command for requesting re-sending of contents information corresponding to the estimated number of missed synchronizations; and

c) in response to the command for requesting re-sending, receiving the contents information subsequent to the estimated number of missed synchronizations, and synchronously reproducing the contents information subsequent to the estimated number of missed synchronizations with the data read from the ~~interactive optical disc~~ storage medium,

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the interactive ~~optical disc~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

12-14. (Cancelled)

15. (Previously Presented) The method as set forth in claim 11, wherein the step of estimating a number of missed synchronizations comprises:

estimating the number of missed synchronizations with reference to a bandwidth of a current network bit rate.

16. (Previously Presented) The method as set forth in claim 11, further comprising:
receiving from the contents provider server an acknowledgement of the command for requesting re-sending prior to the step of receiving the contents information.

17. (Previously Presented) The method as set forth in claim 16, further comprising:
discarding contents information received before the acknowledgement.

18. (Currently Amended) A method for reproducing contents information from an interactive ~~optical-dise~~ device, comprising:

a) receiving contents information from a contents provider server via an Internet, storing the received contents information in a buffer memory, synchronously reproducing data read from ~~an interactive optical-disea~~ storage medium and the stored contents information, and calculating an offset between data read from the ~~interactive optical-dis~~storage medium and contents information received from the contents provider based on offset information sent from the contents server, the offset information being associated with the data read from the storage medium;

b) if receipt of the contents information from the contents provider server is suspended or delayed, sending a command for requesting re-sending of contents information and the offset to the contents provider server while maintaining a playback mode; and

c) in response to the command for requesting re-sending, receiving the contents information corresponding to the offset, and synchronously reproducing the contents information corresponding to the offset with the data read from the ~~interactive optical-dis~~storage medium,

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the interactive ~~optical-disc~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

19-20. (Cancelled)

21. (Previously Presented) The method as set forth in claim 22, further comprising:
discarding contents information received prior to an end of the predetermined time period.

22. (Previously Presented) The method as set forth in claim 18, wherein said step c) comprises:

receiving from the contents provider server an acknowledgement of the command for requesting re-sending prior to the step of receiving the contents information, wherein

the step of synchronously reproducing includes waiting a predetermined time period after the acknowledgement is received prior to synchronizing and reproducing.

23. (Currently Amended) The method as set forth in claim 18, wherein said contents information sent from said contents provider server is audio data, and said data read from said ~~interactive-optical-disc~~storage medium includes video data.

24. (Currently Amended) The method as set forth in claim 11, wherein said contents information sent from said contents provider server is audio data, and said data read from said ~~interactive optical disc~~ storage medium includes video data.

25. (Currently Amended) The method as set forth in claim 6, wherein said contents information sent from said contents provider server is audio data, and said data read from said ~~interactive optical disc~~ storage medium includes video data.

26. (Currently Amended) The method as set forth in claim 1, wherein said contents information sent from said contents provider server is audio data, and said data read from said ~~interactive optical disc~~ storage medium includes video data.

27. (Currently Amended) A method for providing contents information from a contents provider server, comprising:

a) sending contents information from the contents provider server via an Internet to a buffer memory of an interactive ~~optical disc~~ device;

b) receiving an indication that receipt of the contents information by the buffer memory is suspended or delayed, the indication including a command for requesting re-sending of contents information subsequent to a suspension or delay point; and

c) in response to the command for requesting re-sending, sending the contents information subsequent to the suspension or delay point, the indication including one of

a last download position of the contents information in the buffer memory,

information corresponding to an estimated number of missed synchronizations during a corresponding suspension or delay period, the estimated number of missed synchronizations based on a number of counted synchronizations, and

an offset between data read from ~~the interactive optical disc~~ storage medium by the interactive ~~optical disc~~ device and contents information received from the contents provider by the interactive ~~optical disc~~ device,

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the interactive ~~optical disc~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

28. (Currently Amended) The method as set forth in claim 27, wherein said sent contents information is audio data to be reproduced synchronously with video data read from ~~an interactive optical disc~~ the storage medium in said interactive ~~optical disc~~ device.

29. (Cancelled)

30. (Previously Presented) The method as set forth in claim 27, further comprising:
sending an acknowledgement of the command for requesting re-sending.

31. (Currently Amended) An apparatus for reproducing contents information from an interactive ~~optical disc~~ device, comprising:

a receiving portion configured to receive contents information from a contents provider server via an Internet;

a buffer memory configured to store the received contents information;

a reproducing portion configured to reproduce data read from ~~an interactive optical disc~~ storage medium and the stored contents information; and

a controller configured to control the reproducing portion to synchronously reproduce data read from ~~an interactive optical disc~~ the storage medium and the stored contents information,

wherein the controller is further configured to send a last download position of the contents information in the buffer memory to the contents provider server and a request command to the contents provider server to receive contents information subsequent to the last download position if receipt of the contents information from the contents provider server is suspended or delayed while maintaining a playback mode,

wherein the receiving portion is further configured to receive the contents information subsequent to the last download position from the contents provider server in response to the request command from the controller,

wherein the reproducing portion is further configured to synchronously reproduce the contents information subsequent to the last download position with the data read from the ~~interactive optical disc~~ storage medium according to a control of the controller, and

wherein capacity information associated with a storage capacity of the buffer memory is sent to the contents provider server from the ~~interactive optical disc~~ device and the contents information is received from the contents provider server variably with respect to a bit rate in response to the capacity information.

32. (Previously Presented) The apparatus of claim 31, wherein the receiving portion is further configured to receive an acknowledgement of the request command prior to reception of the contents information from the contents provider server.